

```
<!-- XML Document Type Definition for govt, emerging market and corporate bonds -->
<!-- Fixed Income Analytics, -->
```

```
<!-- Basis Elements -->
```

```
<!ENTITY % basic_types PUBLIC "" "basic_types.dtd">
```

```
%basic_types;
```

```
<!-- Bond Elements -->
```

```
<!ELEMENT bond (id+, calendar, issue?, settlement, ex_dividend?, accrual, price?, yield,
linear_last_periods?,
coupons, capitalisation?, amortisation?, stepup?, value_recovery_right?,
option_schedule?, rolling_guarantee?)>
```

```
<!ELEMENT id (id_class, id_value)+>
```

```
<!-- id class: "CUSIP", "ISIN", "COUNTRY-CLASS".. -->
```

```
<!ELEMENT id_class (#PCDATA)>
```

```
<!ELEMENT id_value (#PCDATA)>
```

```
<!-- issue date must be specified if when_if_months defines cashflow dates -->
```

```
<!ELEMENT issue (date)>
```

```
<!ELEMENT settlement (date_context, lockout_period?)>
```

```
<!ELEMENT ex_dividend (periodic_ex_dividend|detailed_ex_dividend)>
```

```
<!ELEMENT periodic_ex_dividend (date_context)>
```

```
<!-- date specifies start date of date context -->
```

```
<!ELEMENT detailed_ex_dividend (date, date_context)+>
```

```
<!ELEMENT accrual ((periodic_accrual|detailed_accrual), accrual_from?)>
```

```
<!ELEMENT periodic_accrual (day_count_type, rounding?)>
```

```
<!-- date specifies start date of day count type -->
```

```
<!ELEMENT detailed_accrual (date, day_count_type, rounding?)+>
```

```
<!ELEMENT accrual_from (date)>
```

```
<!ELEMENT price (price_rounding?, flat_trading?)>
```

```
<!ELEMENT price_rounding (rounding_range, rounding)>
```

```
<!-- rounding range: "all", "llp" when applied only in linear periods, "nollp" -->
```

```
<!ELEMENT rounding_range (#PCDATA)>
```

```
<!-- flat trading: "all", "exdiv" -->
```

```
<!ELEMENT flat_trading (#PCDATA)>
```

```
<!ELEMENT yield (day_count_type, yield_method, frequency?)>
```

```
<!ELEMENT yield_method (#PCDATA)>
```

```
<!-- yield frequency defaults to coupon frequency -->
```

```
<!ELEMENT linear_last_periods (day_count_type, nb_periods, start_on_ex_dividend_date?)>
```

```
<!ELEMENT nb_periods (#PCDATA)>
```

```
<!ELEMENT start_on_ex_dividend_date EMPTY>
```

```
<!-- coupons: amount in annualized % of face value, doesn't include capitalisation, amortisation,
stepup -->
```

```
<!ELEMENT coupons ((periodic_coupons|detailed_coupons|perpetual_coupons), frequency,
index?)>
```

```
<!ELEMENT periodic_coupons (first_coupon, last_regular_coupon?, maturity,
(amount|margin),
```

```
date_adjustment?, amount_adjustment?, cap?, floor?)>
```

```
<!-- amount = redemption: defaults to 100, not compatible with amortisation -->
```

```
<!ELEMENT maturity (date|when_if_months)>
```

```
<!ELEMENT when_if_months (#PCDATA)>
```

```
<!ELEMENT margin (#PCDATA)>
```

```
<!-- date adjustment: "none", "eom" when end of month convention, "busday",
```

```
"busdaymth" when next business day in month -->
```

```
<!-- defaults to "eom" -->
```

```
<!ELEMENT date_adjustment (#PCDATA)>
```

```
<!-- amount adjustment: if specified, uses the accrual day count type -->
```

FIG. 1

amount --> <!-- if not specified, uses coupon frequency to interpret annualized coupon

<!ELEMENT amount_adjustment EMPTY>

<!ELEMENT first_coupon (date)>

<!ELEMENT last_regular_coupon (date)>

<!ELEMENT cap (amount)>

<!ELEMENT floor (amount)>

amount_adjustment?, cap?, floor?)+>

<!ELEMENT perpetual_coupons (first_coupon, amount)>

<!-- index is used when a margin is present in coupons: i.e. "LIBOR", "RPI" -->

<!ELEMENT index (index_id, nb_reset_days?)>

<!ELEMENT index_id (#PCDATA)>

<!ELEMENT nb_reset_days (#PCDATA)>

<!-- capitalisation: amount in annualized % of face value -->

<!ELEMENT capitalisation ((date|when_if_months), amount)+>

<!-- amortisation: amount in % of sinking fund -->

<!ELEMENT amortisation (periodic_amortisation|detailed_amortisation|bullet_amortisation)>

<!-- date specifies start date of amortisation, end date is maturity -->

<!ELEMENT periodic_amortisation ((date|when_if_months), amount)>

<!ELEMENT detailed_amortisation ((date|when_if_months), amount)+>

<!-- bullet amortisation: amount defaults to 100% of sinking fund -->

<!ELEMENT bullet_amortisation (amount?)>

<!-- stepup: coupon variation in annualized % of face value, doesn't include capitalisation -->

<!ELEMENT stepup ((date|when_if_months), amount)+>

<!ELEMENT value_recovery_right (index, (date, amount)+)>

<!ELEMENT option_schedule ((periodic_option_schedule|detailed_option_schedule), date_context?)>

date --> <!-- periodic option defaults: frequency->coupon frequency, termination date->maturity

<!ELEMENT periodic_option_schedule (exercise, frequency?, termination_date?)>

<!ELEMENT termination_date (date)>

<!-- periodic option defaults: frequency->coupon frequency, termination date->maturity

date -->

<!ELEMENT detailed_option_schedule (exercise+)>

<!-- exercise: end: american option, no end: european option -->

<!ELEMENT exercise (option_style, start, end?, strike)>

<!-- option style: either "put" for put option, "call" for call option -->

<!ELEMENT option_style (#PCDATA)>

<!ELEMENT start (date)>

<!ELEMENT end (date)>

<!-- strike price based on 100 face value -->

<!ELEMENT strike (amount)>

<!-- rolling guarantee: start defaults to issue date, end defaults to maturity, index specifies guarantor curve -->

<!ELEMENT rolling_guarantee (start?, end?, nb_periods, principal_guaranteed?, index)>

<!ELEMENT principal_guaranteed EMPTY>

<?xml version = "1.0"?>
<!DOCTYPE bond SYSTEM "cpx_bond.dtd">

<bond>
 <id>
 <id_class>COUNTRY-CLASS</id_class><id_value>brazil-c</id_value>
 <id_class>CUSIP</id_class><id_value>tt3163066</id_value>
 <id_class>ISIN</id_class><id_value>XS0049993479</id_value>
 </id>
 <calendar>lon#nyk</calendar>
 <settlement>
 <date_context>3bd</date_context>
 </settlement>
 <accrual>
 <periodic_accrual>
 <day_count_type>30e/360</day_count_type>
 </periodic_accrual>
 </accrual>
 <yield>
 <day_count_type>30e/360</day_count_type>
 <yield_method>ISMA</yield_method>
 </yield>
 <coupons>
 <periodic_coupons>
 <first_coupon>
 <date><day>15</day><month>10</month><year>1994</year></date>
 </first_coupon>
 <maturity>
 <date><day>15</day><month>4</month><year>2014</year></date>
 </maturity>
 <amount>8</amount>
 </periodic_coupons>
 <frequency>
 <integer>6</integer>
 </frequency>
 </coupons>
 <capitalisation>
 <date><day>15</day><month>10</month><year>1994</year></date> <amount>4.0</amount>
 <date><day>15</day><month>4</month><year>1995</year></date> <amount>4.0</amount>
 <date><day>15</day><month>10</month><year>1995</year></date> <amount>4.0</amount>
 <date><day>15</day><month>4</month><year>1996</year></date> <amount>4.0</amount>
 <date><day>15</day><month>10</month><year>1996</year></date> <amount>3.5</amount>
 <date><day>15</day><month>4</month><year>1997</year></date> <amount>3.5</amount>
 <date><day>15</day><month>10</month><year>1997</year></date> <amount>3.5</amount>
 <date><day>15</day><month>4</month><year>1998</year></date> <amount>3.5</amount>
 <date><day>15</day><month>10</month><year>1998</year></date> <amount>3.0</amount>
 <date><day>15</day><month>4</month><year>1999</year></date> <amount>3.0</amount>
 <date><day>15</day><month>10</month><year>1999</year></date> <amount>3.0</amount>
 <date><day>15</day><month>4</month><year>2000</year></date> <amount>3.0</amount>
 </capitalisation>
 <amortisation>
 <periodic_amortisation>
 <date><day>15</day><month>4</month><year>2004</year></date>
 </periodic_amortisation>
 <amount>4.7619047619</amount>
 </amortisation>

FIG. 3

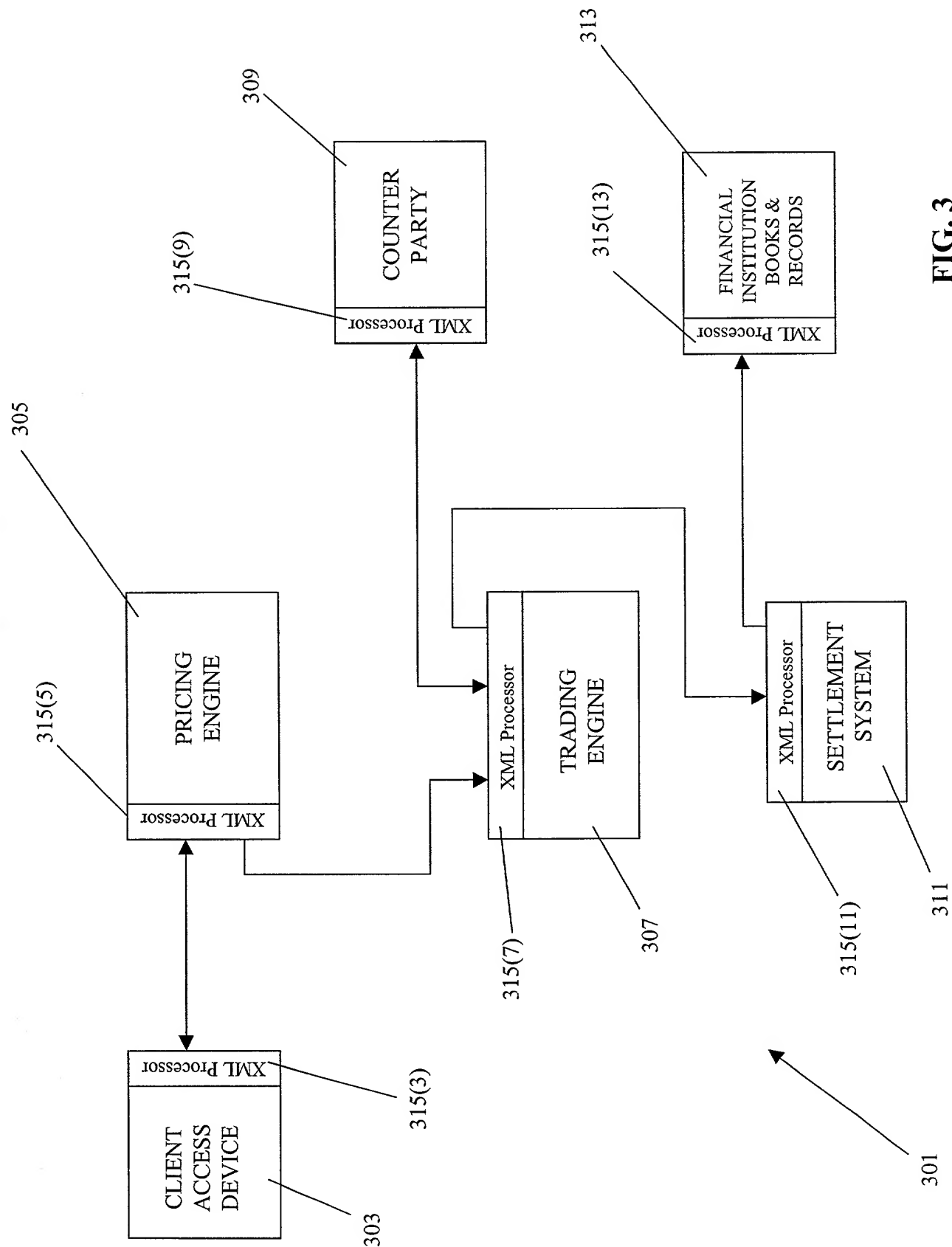


FIG. 3